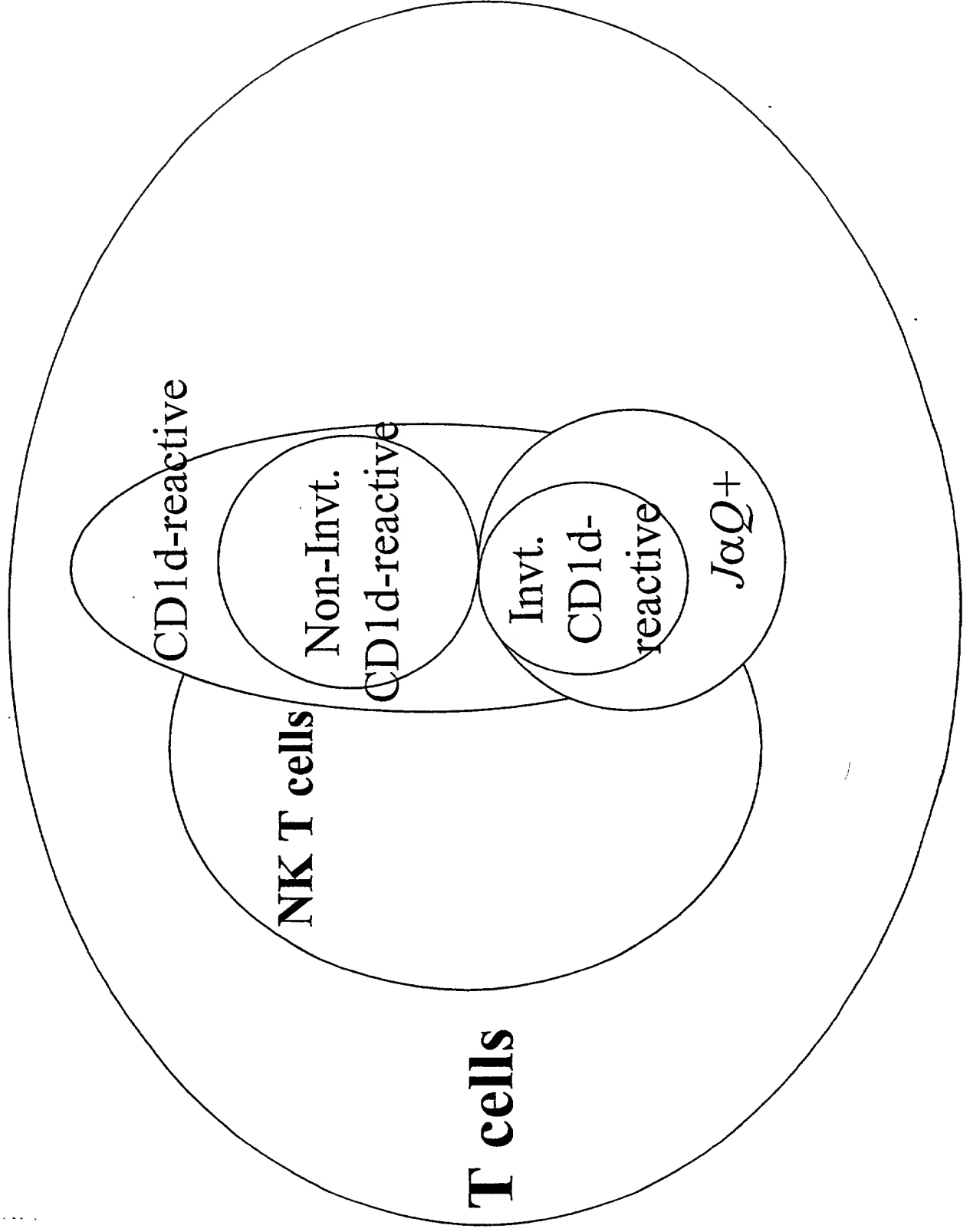


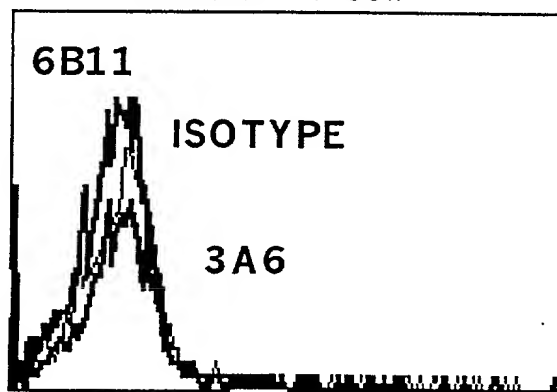
Figure 1



Figures 2A and 2B

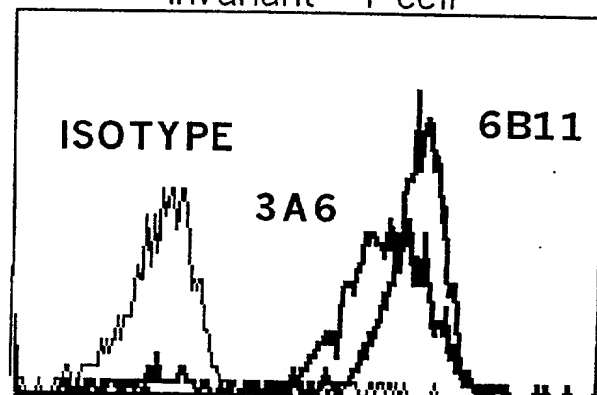
A

Control T-cell

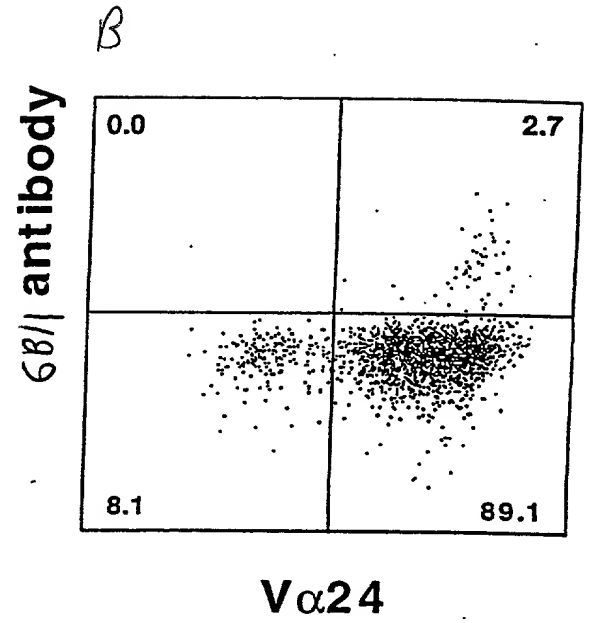
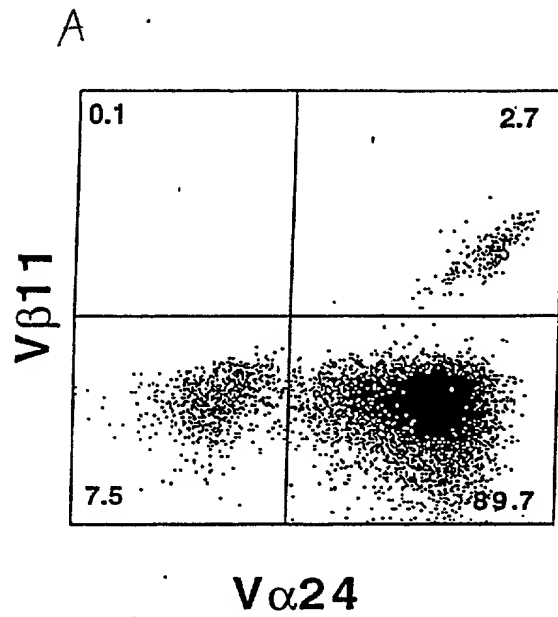


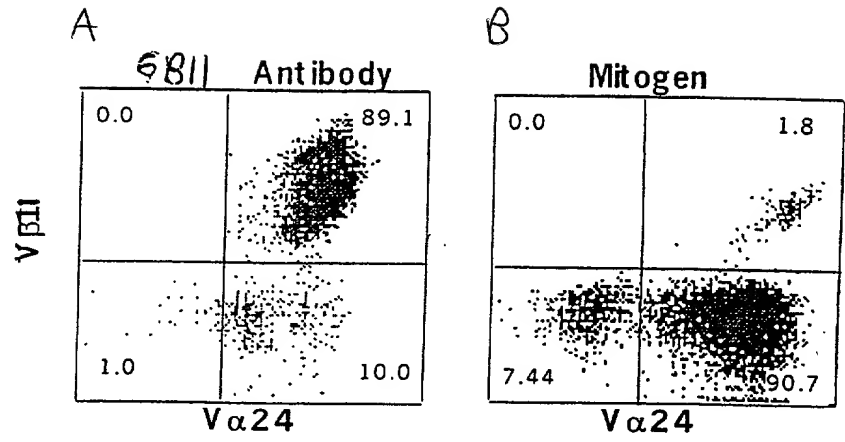
B

Invariant T-cell

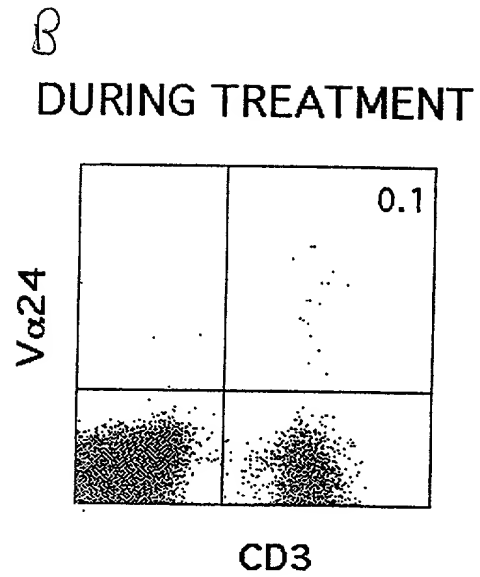
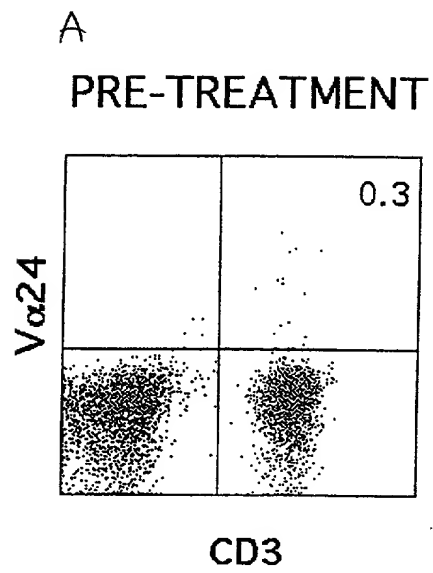


FIGURES 3A and 3B



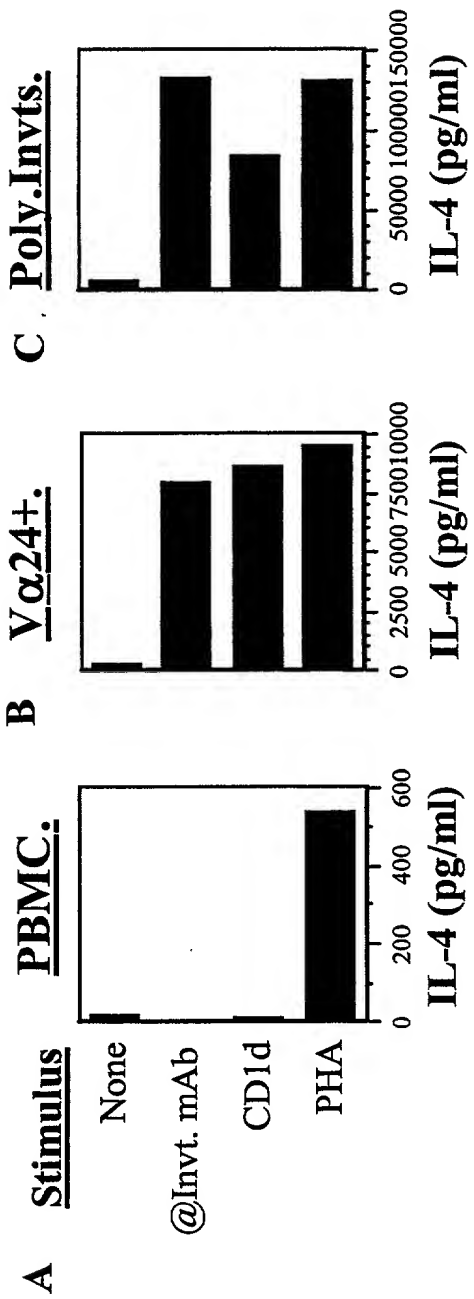
[illegible]

Figures 5A and 5B

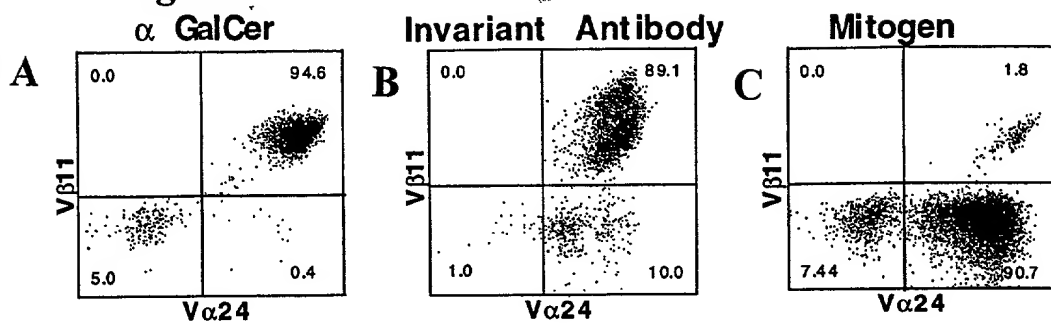


Figures 6A-6C

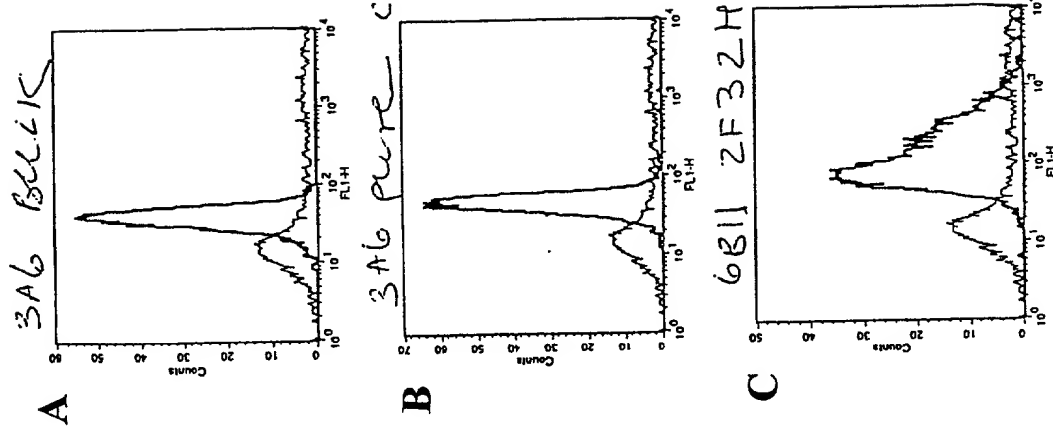
Figure 6A-6C shows the effect of IL-4 on the expression of CD1d and CD1e in PBMCs. The results are shown in the bar graphs below.



Figures 7A-7C



Figures 8A-8C



Figures 8D-8I

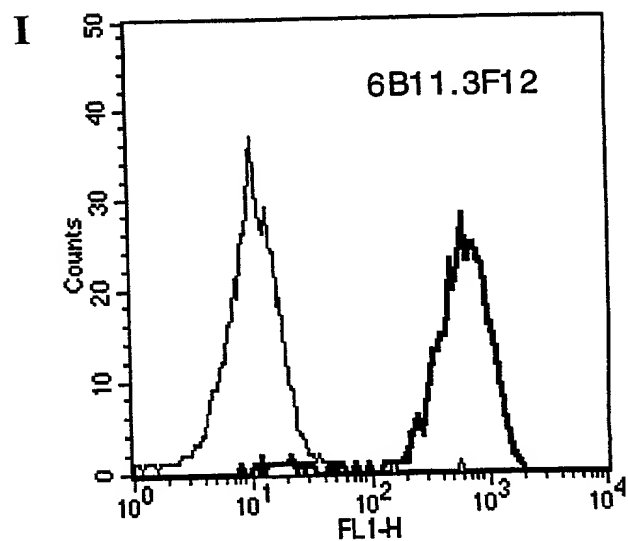
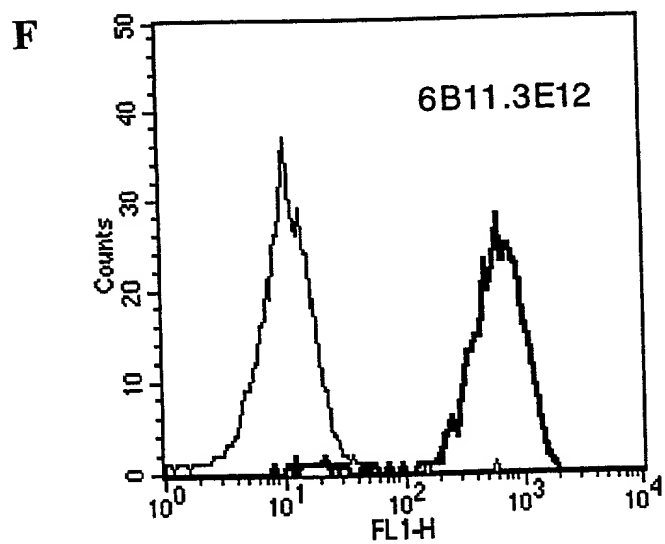
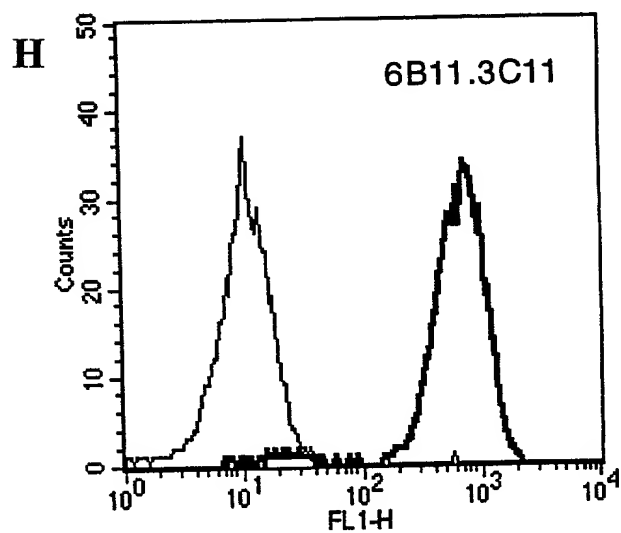
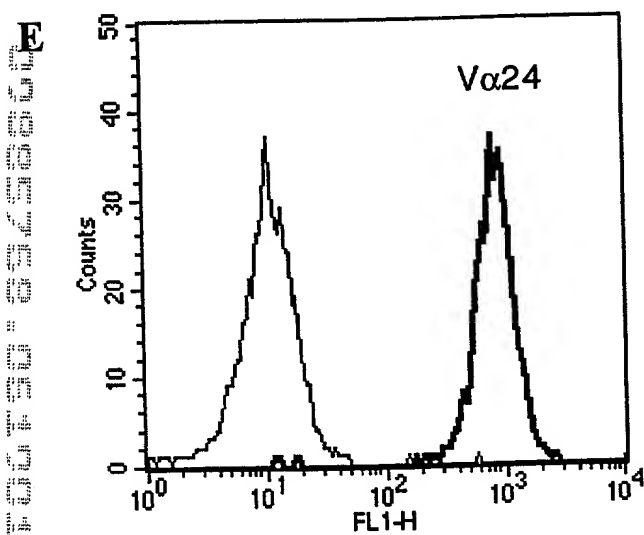
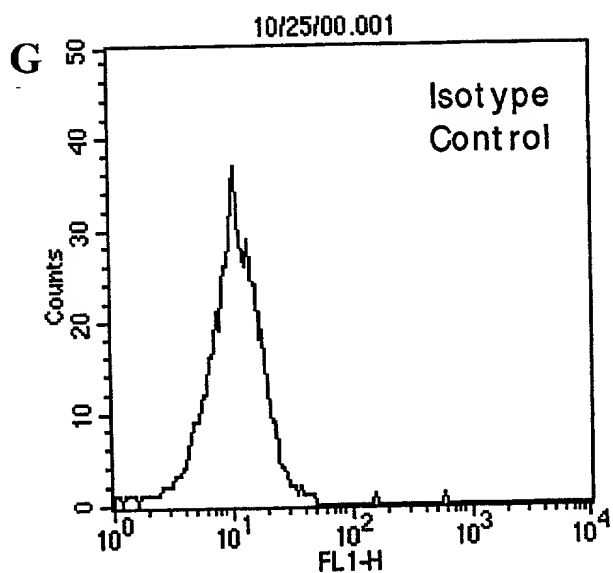
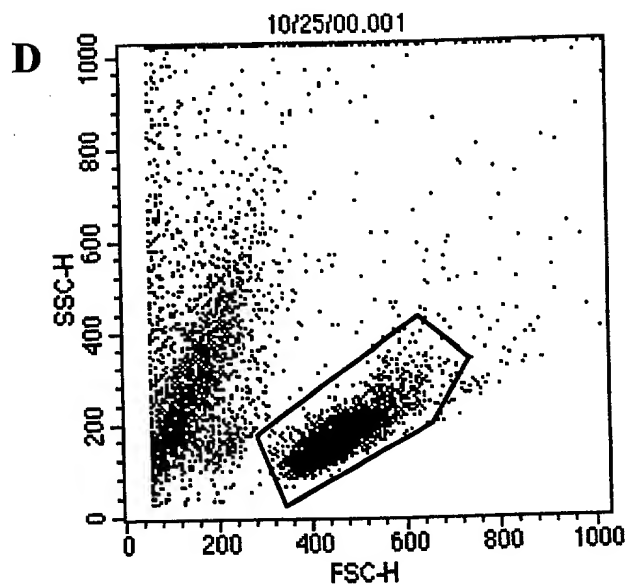
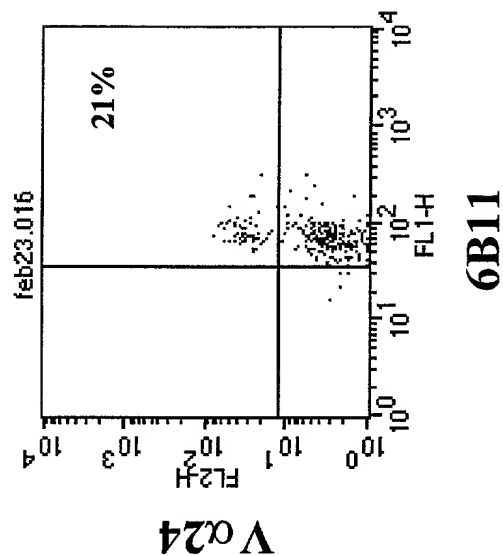
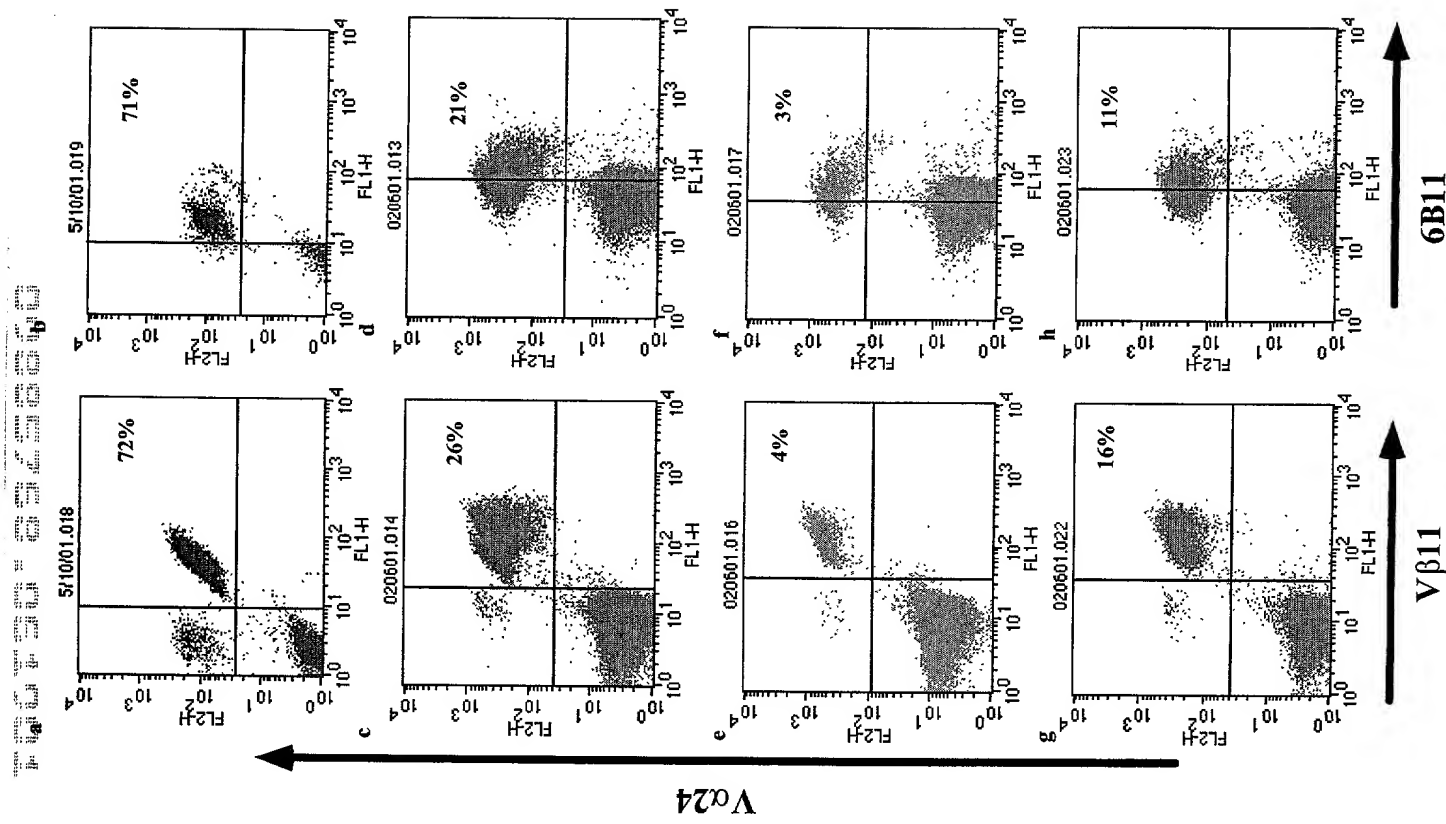


Figure 9

Cellular 6B11



Figures 10A-10H



Figures 11A-11F

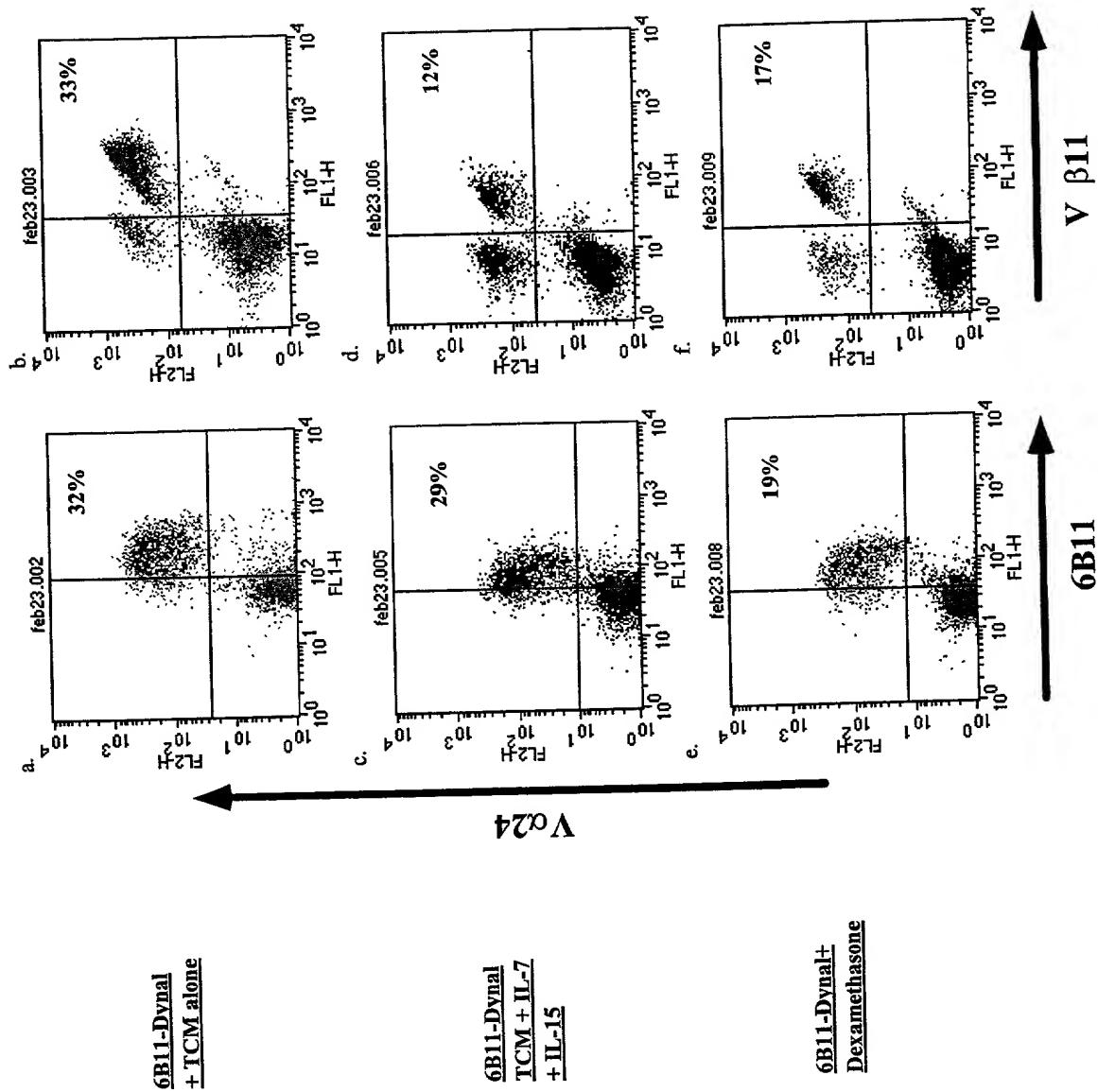


Figure 12

Miltényi vs. Dynal 4/11/01			
	PBMC	Dynal @ 40	Miltényi @ 20
Donor 1			
Vα24/6B11	0	8.46	4.53
Vα24/Vβ11	0.01	4.85	4.71
Vα24		3.9	
Donor 2			
Vα24/6B11	0.01	0.99	5.91
Vα24/Vβ11	0.01	1.47	6.16
Vα24		0.33	
Donor 3			
Vα24/6B11	0	N/A	71
Vα24/Vβ11	0.03	N/A	72
Vα24			5.98
LKP 21 unsorted control			
Vα24/6B11	0.01		
Vα24/Vβ11	0		

Figure 13

Dynal Bead 1/19/01		
LKP 10 on 40 ug/ml 6B11 on TCM		
	V α 24/V β 11	32.98
	V α 24/6B11	32
LKP 10 on TCM + IL15/IL7		
	V α 24/V β 11	12.46
	V α 24/6B11	29
LKP 10 on TCM + dex		
	V α 24/V β 11	17.08
	V α 24/6B11	19
LKP 10 on TCM + IL15/IL7+dex		
	V α 24/V β 11	4.93
	V α 24/6B11	13.81

Fig. 11b

Fig. 11a

Fig. 11d

Fig. 11c

Fig. 11f

Fig. 11e

Fig. 10b

Fig. 10a

Figure 14

Dynal 6B11 Bead Prep 3/9/01		
LKP 14 unsorted control		
3/20/01	V α 24/V β 11	0.02%
	V α 24/6B11	0.01%
LKP 14 6B11 + PHA + auto APC		
3/20/01	V α 24/V β 11	0.09%
	V α 24/6B11	0%
4/20/01	V α 24/V β 11	0.13%
	V α 24/6B11	0.00%
	V α 24	0.01%
LKP 14 6B11 + auto APC		
3/20/01	V α 24/V β 11	0.68%
	V α 24/6B11	0.02%
4/20/01	V α 24/V β 11	0.15%
	V α 24/6B11	0.00%
	V α 24	0.73%
4/27/01	alpha Gal Cer stim	
5/10/01	V α 24/V β 11	2.73%
	V α 24/6B11	2.94%
unsorted control		
	V α 24/V β 11	0.01%
	V α 24/6B11	0.01%
6B11 + PHA + auto APC		
4/20/01	V α 24/V β 11	3.64%
	V α 24/6B11	3.75%
5/10/01	V α 24/V β 11	5.01%
	V α 24/6B11	4.92%

[illegible][illegible]

Figure 16

Miltenyi Prep #1 6B11		1/01
LKP2 +auto APC on TCM		
2/6/01	V α 24/V β 11	26.07%
	V α 24/6B11	21%
2/23/01	V α 24/6B11	10.79%
3/26/01	alpha Gal Cer stim	
4/20/01	V α 24/V β 11	73.40%
	V α 24/6B11	74.66%
4/27/01	alpha Gal Cer stim	
5/14/01	V α 24/V β 11	80.87%
	V α 24/6B11	79.98%
LKP2 +auto APC on TCM + IL7/IL15		
2/6/01	V α 24/V β 11	16%
	V α 24/6B11	11%
3/26/01	alpha Gal Cer stim	
4/20/01	V α 24/V β 11	54.28%
	V α 24/6B11	56.89%
4/27/01	alpha Gal Cer stim	
5/14/01	V α 24/V β 11	68.05%
	V α 24/6B11	68.85%
	V α 24	1.66%

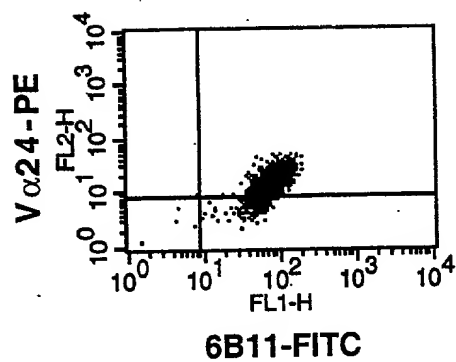
Figure 17

Miltenyi Prep #2		1/01
LKP 11 on Vα24 + auto APC + PHA		
2/23/01	V α 24/6B11	63.75%
3/20/01	V α 24/V β 11	1.43%
	V α 24/6B11	0.07%
4/27/01	alpha Gal Cer stim	
5/10/01	V α 24/V β 11	24.78%
	V α 24/6B11	14.94%
LKP 11 on 6B11 + auto APC + PHA		
2/23/01	V α 24/6B11	45.27%
LKP 12 on Vα24 + auto APC + PHA		
2/23/01	V α 24/6B11	33.51%
3/20/01	V α 24/V β 11	0.25%
	V α 24/6B11	0.25%
4/27/01	alpha Gal Cer stim	
5/14/01	V α 24/V β 11	0.00%
	V α 24/6B11	0.00%
	V α 24	55.00%

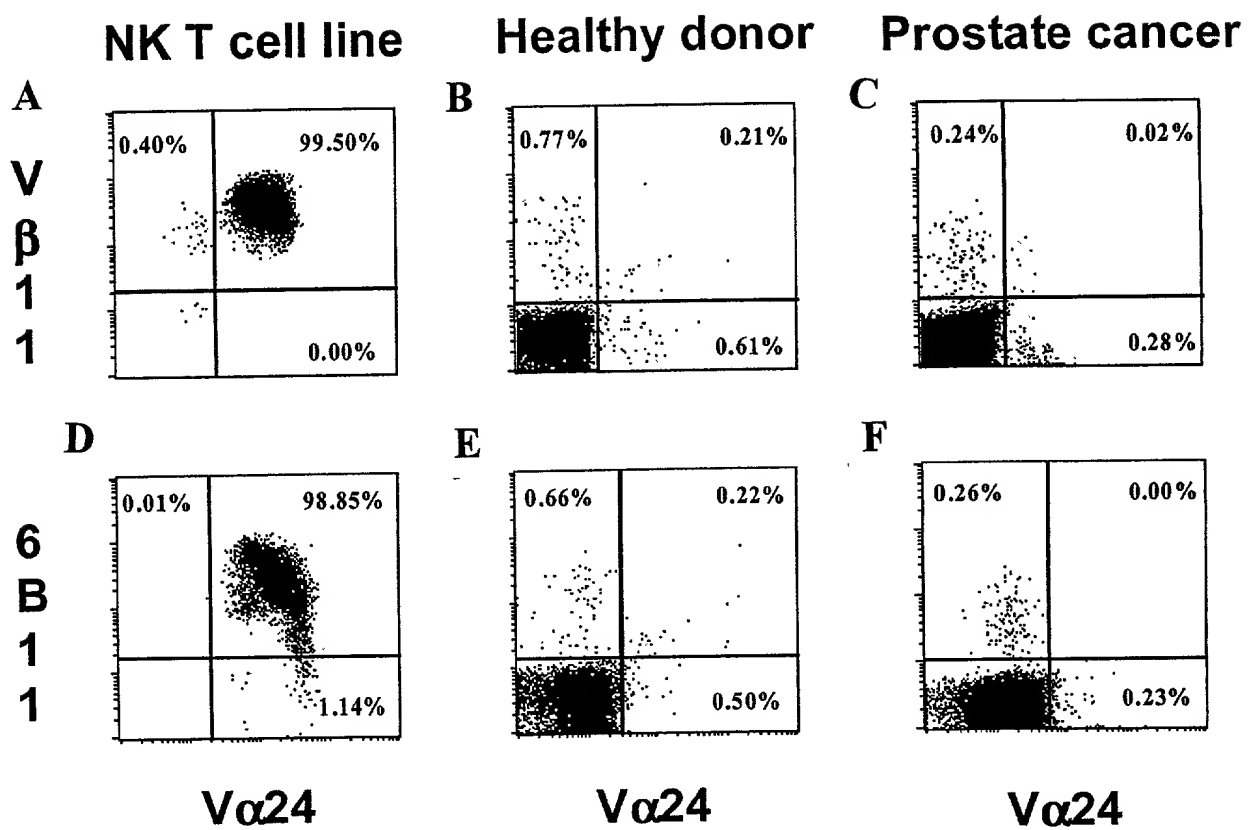
Fig. 10c
Fig. 10d

Fig. 10g
Fig. 10h

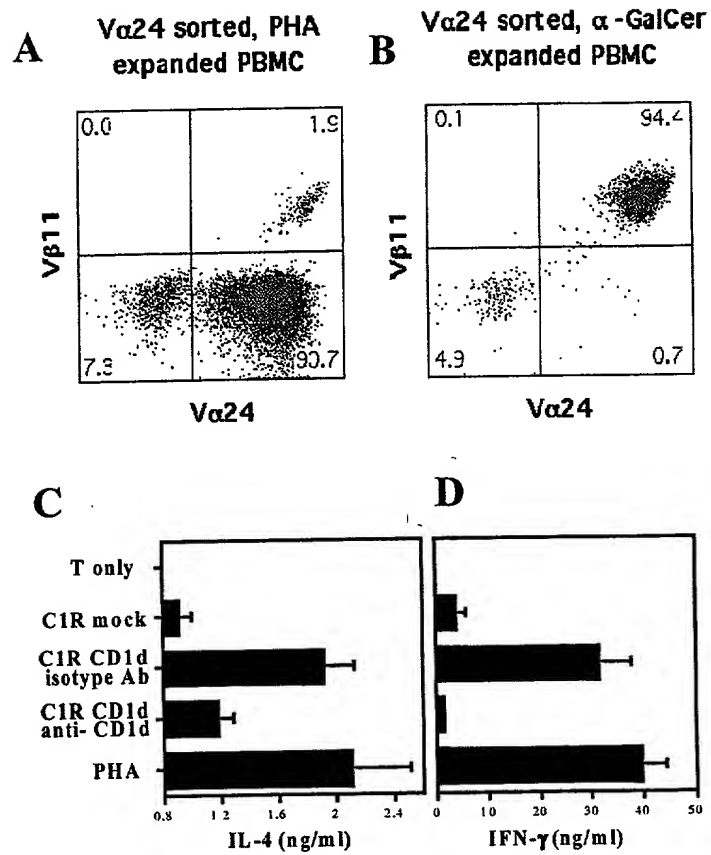
Figure 18



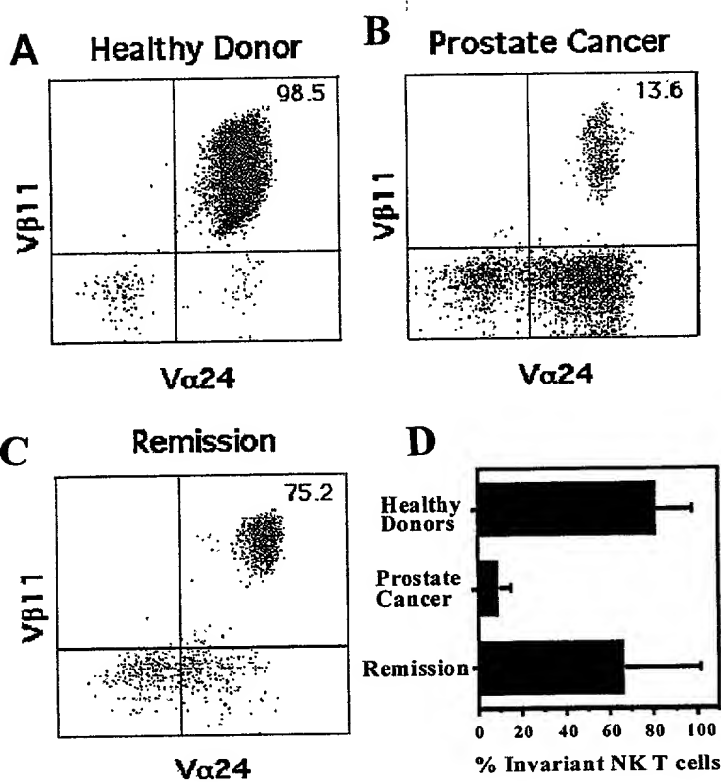
Figures 19A-19F



Figures 20A-20D



Figures 21A-21D



Figures 22A-22E

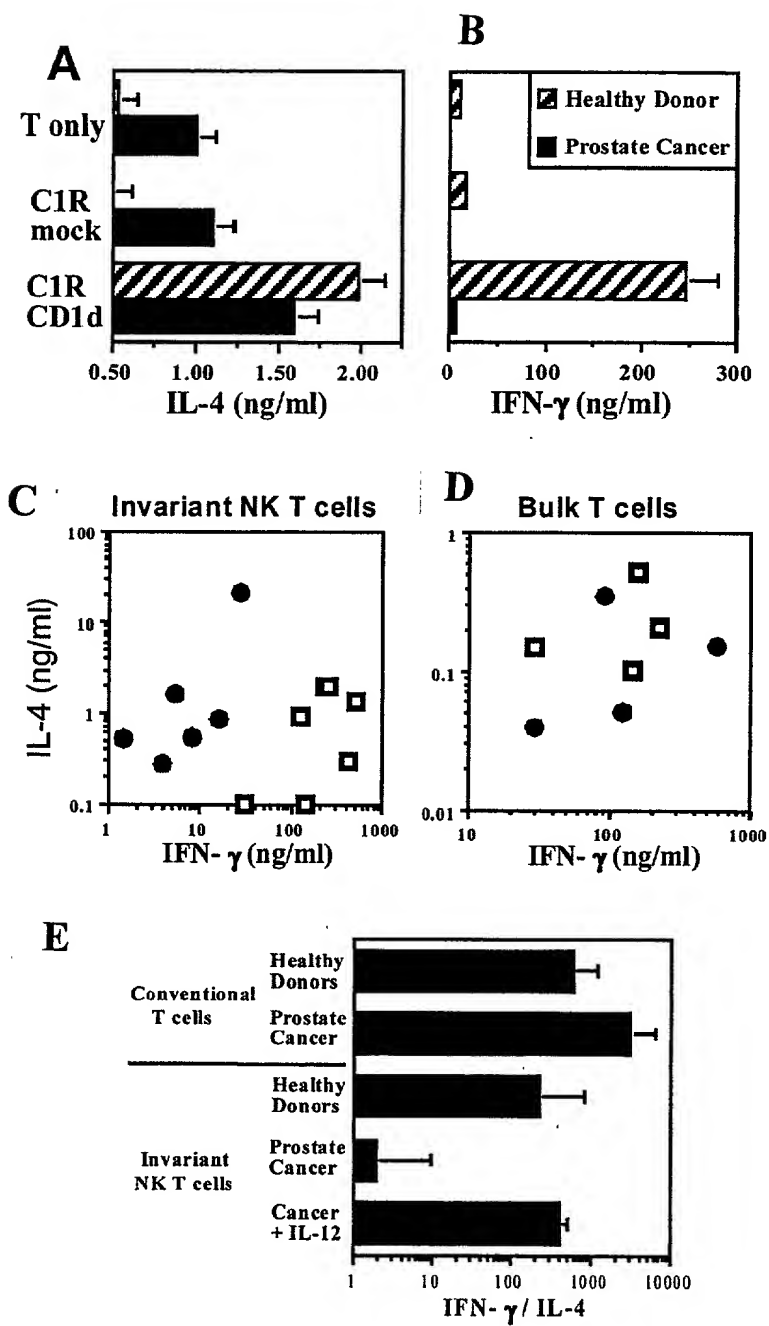


Figure 23

NK-T Dendritic Cell Study

Sero-Negatives

Date	Patient ID	Name	Serostatus	CD4 ABS	HIV copies/ml	Lymph Count	T-Cell Count	NK-T Count	% NK-T Lymph	ABS Lymph	ABS NK-T	% NK-T CD3	% CD123+ DC Leuk	% CD11c+ DC Leuk	WBC	ABS CD123+DC	ABS
5/3/00	Yang		0			44728	27503	44	0.0984		0.0000	0.1600	***	***		***	***
5/9/00	91841		0	927		79175	64673	74	0.0935	1782	1.6655	0.1144	***	***	5400	***	***
5/11/00	42893		0			67709	47828	1	0.0015		0.0000	0.0021	***	***		***	***
5/18/00	91921		0	787		47660	32443	4	0.0084	1749	0.1468	0.0123	***	***	5300	***	***
5/24/00	91960		0	621		33001	26942	166	0.5030	1150	5.7847	0.6161	***	***	5000	***	***
5/25/00	91960*		0	621		33855	27347	206	0.6085	1150	6.9975	0.7533	***	***	5000	***	***
5/30/00	92001		0	898		65330	46630	48	0.0735	1632	1.1991	0.1029	***	***	4800	***	***
6/6/00	92065		0	735		61812	50967	15	0.0243	1634	0.3965	0.0294	***	***	3800	***	***
6/14/00	92145		0	796		84897	56717	26	0.0306	1768	0.5415	0.0458	***	***	5200	***	***
8/24/00	92673		0	821		76582	51494	45	0.0588	2160	1.2692	0.0874	0.170	0.320	4000	6.80	12.80
9/8/00	40211		0	1040		96769	78779	56	0.0579	2040	1.1805	0.0711	0.057	0.027	5100	2.93	1.37
9/8/00	92800		0	957		82627	63397	31	0.0375	1740	0.6528	0.0489	0.043	0.084	5800	2.47	4.85
1/24/01	42959		0	0		153419	112395	19	0.0124		0.0000	0.0169	0.032	0.051		0.00	0.00
1/25/01	40545		0	653		79252	44870	15	0.0189	1452	0.2748	0.0334	0.135	0.358	3300	4.47	11.81
1/25/01	40634		0	583		44101	36543	1	0.0023	1122	0.0254	0.0027	0.050	0.086	5100	2.55	4.39
1/31/01	41214		0	***		***	***	***	***	***	***	***	0.088	0.084		0.00	0.00
1/31/01	42888		0	***		***	***	***	***	***	***	***	0.073	0.062		0.00	0.00
2/1/01	40086		0	850		76313	67231	42	0.0550	1700	0.9356	0.0625	0.086	0.240	5000	4.31	11.98
2/1/01	40128		0	689		61816	47823	22	0.0356	1377	0.4901	0.0460	0.030	0.043	5100	1.54	2.21
2/22/01	40059		0			111766	85872	5	0.0045		0.0000	0.0058	0.040	0.085		0.00	0.00
2/28/01	41842		0			62325	48159	12	0.0193		0.0000	0.0249	0.111	0.264		0.00	0.00

Serostatus: 0=seronegative, 1=HIV-1infected, 2=HIV-1 Seroconverter, 3=AIDS
 >0.02% NK-Tcells || lymphs considered positive
 *5/25/00 (91960) blood is 24 hrs. old

Figure 23 Continued

NK-T Dendritic Cell Study
Sero-Positives

Date	Patient ID	Name	Serostatus	CD4 ABS	HIV copies/ml	Lymph Count	T-Cell Count	NK-T Count	% NK-T Lymph	ABS Lymph	ABS NK-T	% NK-T II CD3	% CD123+ DC Leuk	% CD11c+ DC Leuk	WBC	ABS CD123+DC	ABS CD11c+DC
5/25/00	40263		1	635	2257	79350	50332	6	0.0076	1813	0.1371	0.0119	***	***	3700	***	***
6/1/00	41989		1	699	0	81811	63503	250	0.3056	2254	6.8878	0.3937	***	***	4600	***	***
6/14/00	40846		3	559	0	98766	74485	3	0.0030	2432	0.0739	0.0040	***	***	7600	***	***
6/15/00	45555		1	668	30300	93116	55888	11	0.0118	2088	0.2467	0.0197	***	***	7200	***	***
6/15/00	41400		3	199	167000	50249	43105	6	0.0119	1107	0.1322	0.0139	***	***	4100	***	***
8/28/00	42946		1	768	212000	76925	63905	12	0.0156	2193	0.3421	0.0188	0.070	0.260	5100	3.57	13.26
9/8/00	20461		1	671	308	181054	111247	3	0.0017	3726	0.0617	0.0027	0.023	0.023	8100	1.82	1.87
9/8/00	40177		1	658	0	73001	54950	8	0.0110	1530	0.1677	0.0146	0.027	0.090	5100	1.37	4.58
1/24/01	41411		2	977		108212	88856	34	0.0314	2640	0.8295	0.0383	0.151	0.266	6000	9.03	15.98
1/26/01	40360		2	***	***	***	***	***	***	***	***	***	0.083	0.132		0.00	0.00
2/7/01	41266		1	354		48310	35405	1	0.0021	1219	0.0252	0.0028	0.040	0.137	5300	2.14	7.28
2/7/01	40646		2	0		55088	46321	2	0.0036		0.0000	0.0043	0.078	0.139		0.00	0.00
2/8/01	41329		1	0		86792	78696	5	0.0058		0.0000	0.0064	0.072	0.075		0.00	0.00
2/8/01	42964*		(unknown)	0		62696	52449	10	0.0159		0.0000	0.0191	0.031	0.038		0.00	0.00
2/14/01	42946		(unknown)	0		103913	83889	54	0.0520		0.0000	0.0644	0.039	0.124		0.00	0.00
2/22/01	41977		1			121798	95033	25	0.0205		0.0000	0.0263	0.022	0.029		0.00	0.00
3/1/01	40605		4			86319	71338	29	0.0336		0.0000	0.0407	0.088	0.092		0.00	0.00

Serostatus: 0=seronegative, 1=HIV-1infected, 2=HIV-1 Seroconverter, 3=AIDS

>0.02% NK-Tcells || lymphs considered positive

*2/8/01 (42964) blood is 24 hrs. old

***1/26/01, Va24 FITC used instead of Va24PE

Figure 23 Continued

[illegible]

Figure 23 Continued

9/8/99	20461	1	671	308	181054	111237	3	0.0017	0.0027	0.02	0.02
5/25/00	40263 Visit 330	1	635	2257	79350	50332	6	0.0076	0.0119		
6/15/00	45555 Visit 335	1	668	30300	93116	55688	11	0.0118	0.0197		
6/15/00	41400 Visit 330	3	199	167000	50249	43105	6	0.0119	0.0139		
8/28/00	42946	1	768		76925	63905	12	0.0156	0.0188	0.07	0.26
9/8/99	40177	1	658	0	73001	54946	8	0.0110	0.0146	0.03	0.09
6/1/00	41989 Visit 335	1	699	0	81811	63503	250	0.3056	0.3937		
6/14/00	40846 Visit 330	3	559	0	98766	74485	3	0.0030	0.0040		
	mean				91784	64675.13	37.375	0.046018798	0.05990837	0.04	0.123333333
	SD				38863.254	21074.95	85.97664	0.104985353	0.13500524	0.026457513	0.123423391
	SN vs SP/Detect				0.2719675	0.294514	0.016718	0.084419635	0.06891274	0.414444189	0.984173536
	SN vs SP/Undetect				0.0907158	0.042664	0.752949	0.934380609	0.9172846	0.445328944	0.815483198
	SP/Detect vs SP/Undetect	0.479			0.5857258	0.959285	0.390795	0.390489333	0.39541498	0.890843778	0.836166008
	SN vs SP/All				0.1335716	0.118728	0.77884	0.434584864	0.40972451	0.343667848	0.870121379

serostatus: 0 = HIV-1 seronegative, 1= HIV-1 infected, 3=AIDS
> 0.02% NK-Tcells || lymphs considered positive

Figure 24

: Percent of cells expressing both markers out of the total number of cells collected									
Run	Control	New Onset	Control	New Onset	Control	New Onset	Control	New Onset	
	6B11 FC	6B11 FC			6B11 FC	6B11 FC	VB11 PE	VA24 FC	VB11 PE
1	0.02	0.07	0.03	0.08	0.03	0.08	0.04		0.05
2	0.10	0.17	0.13	0.28			0.05		0.08
3	0.05	0.17	0.00	0.23			0.04		0.22
4	0.06	0.33	0.03	0.32			0.09		0.26
5	0.03	0.03	0.02	0.00			0.03		0.00
6	0.06	0.23	0.08	0.21			0.09		0.23
7	0.06	0.09	0.08	0.14			0.08		0.12
	Avg.	0.16	Avg.	0.18			Avg.		0.14
	Std. Dev.	0.10	Std. Dev.	0.11			Std. Dev.		0.10
Table 1: Percent of cells expressing both markers out of the gated population									
Run	Control	New Onset	Control	New Onset	Control	New Onset	Control	New Onset	
	6B11 FC	6B11 FC			6B11 FC	6B11 FC	VB11 PE	VA24 FC	VB11 PE
1	0.02	0.08	0.03	0.09	0.03	0.09	0.04		0.06
2	0.11	0.17	0.14	0.30			0.06		0.09
3	0.06	0.19	0.00	0.25			0.05		0.24
4	0.07	0.34	0.03	0.33			0.10		0.27
5	0.05	0.04	0.04	0.00			0.04		0.00
6	0.07	0.29	0.10	0.27			0.11		0.29
7	0.07	0.12	0.09	0.17			0.09		0.15
	Avg.	0.18	Avg.	0.20			Avg.		0.16
	Std. Dev.	0.11	Std. Dev.	0.12			Std. Dev.		0.11
	0.03506137		0.021871				0.088943		

Figure 25A

Genes differentially expressed between natural killer
T cell clones ME10 and GW4

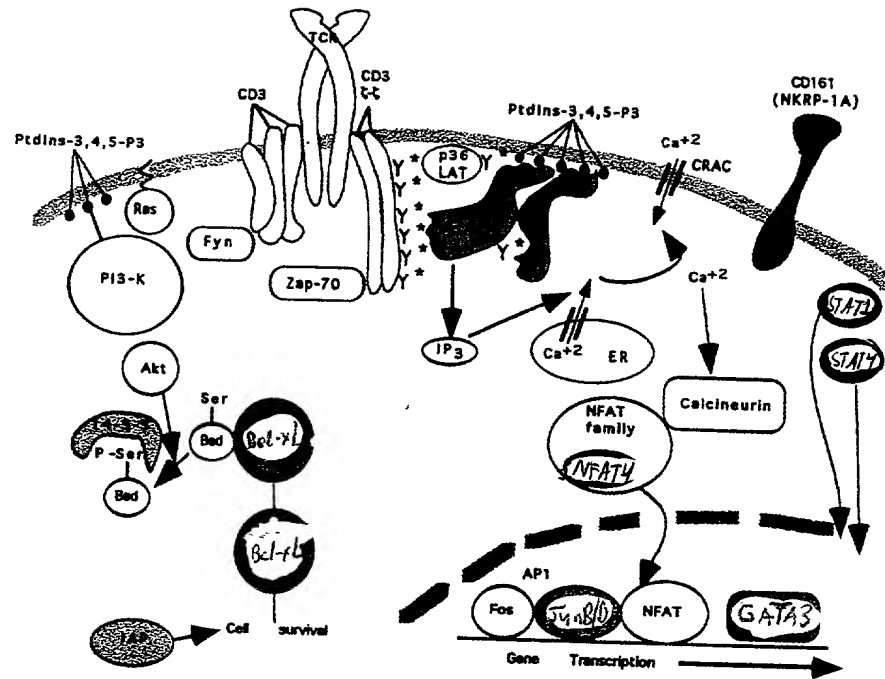
Functional category	Accession no.	Common name	Cluster (row, column)	Functional category	Accession no.	Common name	Cluster (row, column)
Surface receptor	U38276	Semaphorin III	(1,1)		V00536	IFN- γ	(1,2)
	U82169	Frizzled	(1,1)		M13207	GM-CSF	(1,2)
	M32315	TNF-R	(1,2)		M16441	TNF- α	(1,2)
	U03397	4-1BB	(1,2)		X02910	TNF- α	(1,2)
	S77812	VEGF-R	(1,2)		X04688	IL-5	(1,2)
	X01057	IL-2R α	(1,2)		U31120	IL-13	(1,2)
	Y00285	IGF-R II	(1,2)		M37435	M-CSF	(1,2)
	L08096	CD27	(1,2)		U02020	PBEF	(1,2)
	Z30426	CD69	(1,2)		U37518	TRAIL	(1,2)
	U76764	CD97	(1,2)		U46461	Dishevelled homolog	(1,2)
	U60800	CD100	(1,2)		M90391	IL-16	(2,3)
	M24283	Rhinovirus-R	(1,2)	Nuclear protein	U73477	Nuclear pp32	(1,1)
	U19906	Arginine vasopressin-R	(1,2)		U62962	Int-6	(1,2)
	Z48042	p137	(1,2)		L25931	Lamin B receptor	(1,3)
	D79206	Ryudocan	(1,3)		M17733	Thymosin- β 4	(2,3)
	HT3125	CD44	(1,3)	Transcription factor			
	L39064	IL-9R	(2,1)		M69043	I κ B α	(1,2)
	X14046	CD37	(2,1)		X58072	GATA-3	(1,2)
	L31584	EBI-1	(2,1)		U43185	STAT-5A	(1,2)
	X97267	LPAP	(2,1)		X51345	Jun-B	(1,2)
	M33680	TAPA-1	(2,2)		X56681	Jun-D	(1,2)
	M63175	AMFR	(2,2)		U15460	B-ATF	(1,2)
	U60975	gp250	(2,2)		HT4899	C-myc	(1,2)
	Z50022	C21orf3	(2,2)		L00058	C-myc	(1,2)
	U90546	Butyrophilin BT4	(2,3)		M13929	C-myc	(1,2)
	U90552	Butyrophilin BT5	(2,3)		U26173	NF-IL3A	(1,2)
	X96719	AICL	(2,3)		M97796	Id-2	(1,2)
Cytoskeleton					M96843	Id-2B	(1,2)
	U80184	Flightless I homolog	(1,1)		D14826	CREM	(1,2)
	X00351	β -Actin	(1,2)		S68271	CREM	(1,2)
	U20582	Actin-like peptide	(1,2)		J03827	Y box BP	(1,2)
	X82207	β -Centractin	(1,2)		U09412	ZNF134	(1,2)
	X98534	VASP	(1,2)		U13044	NRF-2 α	(1,2)
	D83735	Calponin	(2,1)		U22431	HIF-1 α	(1,2)
	J00314	β -Tubulin	(2,3)		X78925	HZF-2	(1,2)
	M21812	Myosin LC	(2,3)		Z47727	RNA POL2K	(1,2)
	X98411	Myosin-IE	(2,3)		J04076	EGR-2	(1,3)
Kinase/phosphatase					D61380	DJ-1	(1,3)
	X79510	PTP D1	(1,1)		HT4567	PC4	(1,3)
	L10717	ITK	(1,2)		HT4921	BTF-3 homolog	(2,1)
	X60673	AK3	(1,2)		L41067	NFAT-4C	(2,3)
	X85545	PKX-1	(1,2)		L78440	STAT-4	(2,3)
	D13720	LYK	(1,2)		M82882	ELF-1	(2,3)
	HT1153	Nm23-H2S	(1,2)		M83667	NF-IL6	(2,3)
	M30448	CK II β	(1,2)	Signal transduction			
	M90299	Glucokinase	(1,2)		HT5108	TRAP-3	(1,1)
	U08316	ISPK-1	(1,2)		X80200	MLN62	(1,1)
	X80910	PPP1CB	(1,2)		U20158	SLP-76	(1,2)
	X93920	DUSP-6	(1,2)		U26710	Cbl-b	(1,2)
	U24152	PAK-1	(1,3)		D78132	RHEB	(1,2)
	D11327	PTPN7	(1,3)		M63573	SCYLP	(1,2)
	U15932	DUSP-5	(1,3)		M75099	FK506 BP	(1,2)
	L16862	GRK-6	(2,1)		Z35227	TTF	(1,2)
	L27071	TXK	(2,1)		U19261	EBV-independent	(1,3)
	J03805	PPP2CB	(2,2)		M28209	RAB-1	(2,2)
	HT3678	CLK-1	(2,3)		D78577	14-3-3-Eta	(2,3)
	U66464	HPK-1	(2,3)		X89399	Ins(1345)P4 BP	(2,3)
	X62535	DAG kinase	(2,3)	RNA Metabolism			
	M31724	PTP-1B	(2,3)		D38251	RNP B5	(1,1)
Cytokine					U90547	RNP homolog	(1,1)
	U89922	LT- β	(1,1)		X17567	RNP B	(1,2)
	J00219	IFN- γ	(1,2)		M29064	RNP B1	(1,2)

Figure 25A_(continued)

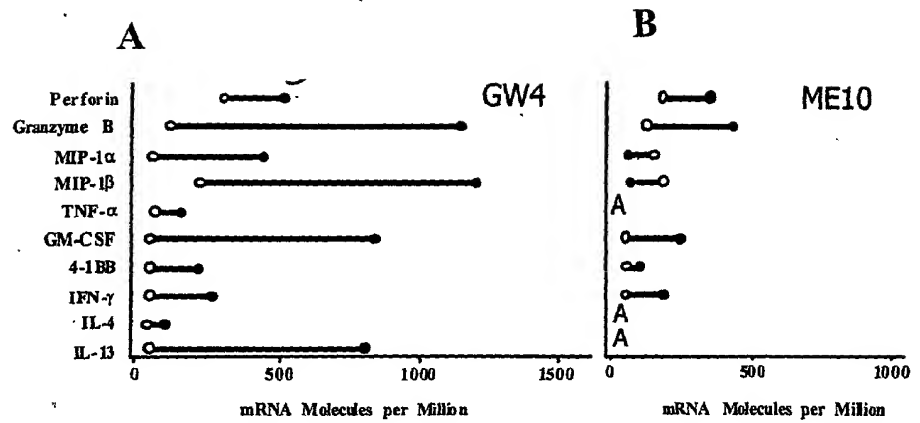
Functional category	Accession no.	Common name	Cluster (row, column)
	HT110	RNP A/B	(1,2)
	Z23064	RNP G	(1,2)
	HT3238	RNP K	(1,2)
	X52979	RNP SmB	(1,2)
	U15009	RNP SmD3	(1,2)
	X85372	RNP Sm F	(1,2)
	U30827	SF SRp40	(1,2)
	X70944	SF (PTP-associated)	(1,2)
	M60858	Nucleolin	(1,2)
	U10323	NF45	(1,2)
	U38846	Stimulator of TAR	(1,2)
	X59417	PROS-27	(1,2)
	X59892	IFN-independent γ 2	(1,2)
	X66899	EWS	(1,2)
	X71428	fus	(1,2)
	X72727	Tunp	(1,2)
	X75755	PR264	(1,2)
	Z24724	Poly A site	(1,2)
	L28010	RNP F	(1,3)
	HT4788	RNP I	(1,3)
	L03532	M4	(1,3)
	U69546	RNA BP	(2,3)
Apoptosis			
	Z23115	Bcl-X _L	(1,2)
	U45878	IAP-1	(1,2)
	U11821	Fas ligand	(1,2)
	S81914	IEX-1	(1,2)
	U37546	MIHC	(1,2)
Chemokine			
	M23178	MIP-1 α	(1,2)
	J04130	MIP-1 β	(1,2)
	M69203	MCP-1	(1,2)
	L19686	MIF	(1,3)
Protein metabolism			
	D28473	ILE-tRNA synthase	(1,2)
	U09510	GLY-tRNA synthase	(1,2)
	L25085	Sec61- β	(1,2)
	X74801	Chaperonin cctg	(1,2)
	X77584	Thioredoxin	(1,2)
	Y00281	Ribophorin I	(1,2)
	Y10807	ARG-methyltransferase	(1,3)
	D13748	EIF-4A1	(1,3)
	X55733	EIF-4B	(2,1)
	X76648	Glutaredoxin	(2,3)

Genes populating the six expression clusters for the 11 gene functional categories shown in Fig. 2 are listed. Each gene is identified by GenBank accession no. [or The Institute for Genomic Research (TIGR) identifier for HT designations], followed by a common name and the specific cluster into which it fell (row, column).

Figure 25b

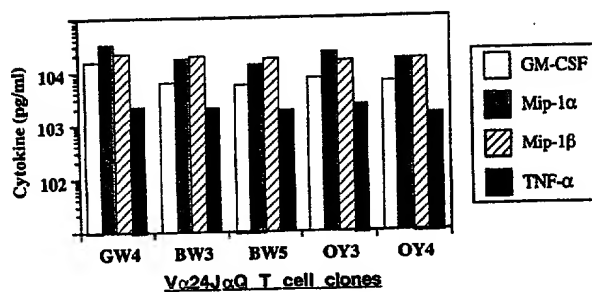


Figures 26A and 26B

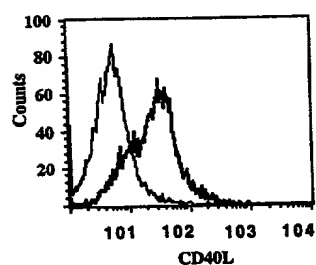


Figures 26C and 26D

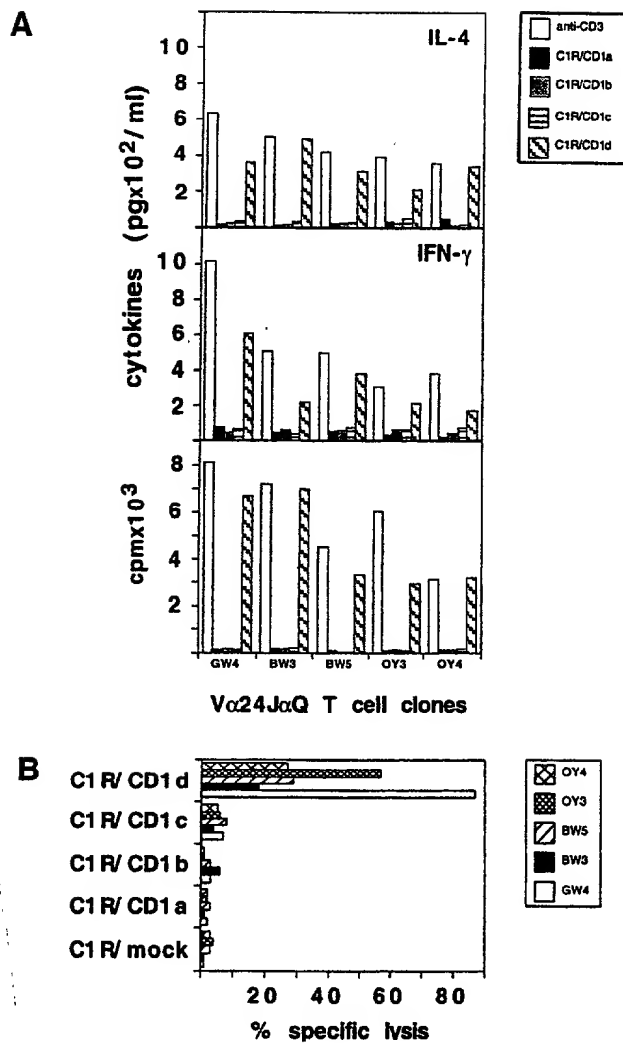
26 C.



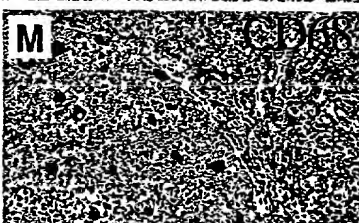
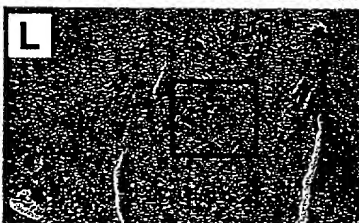
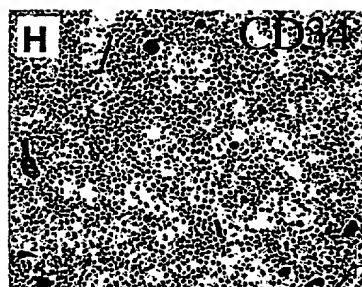
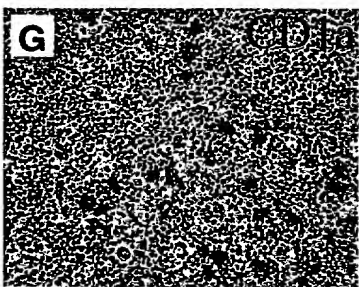
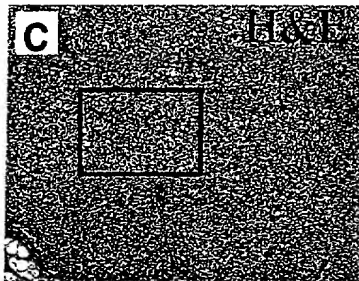
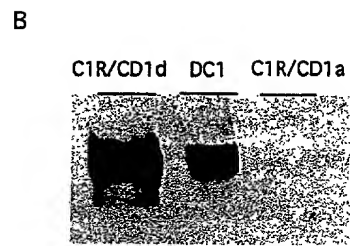
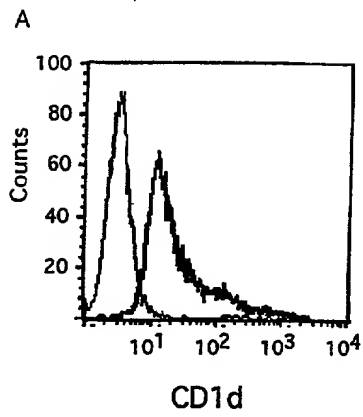
26 D.



Figures 27A and 27B



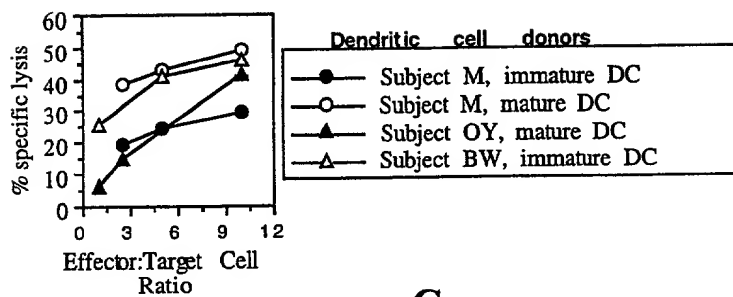
Figures 28A - 28N



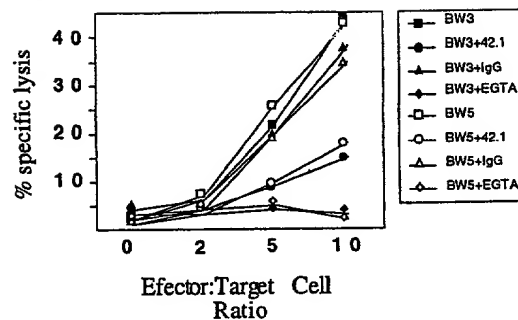
Downloaded from www.jci.org on June 4, 2014

Figures 29A-29E

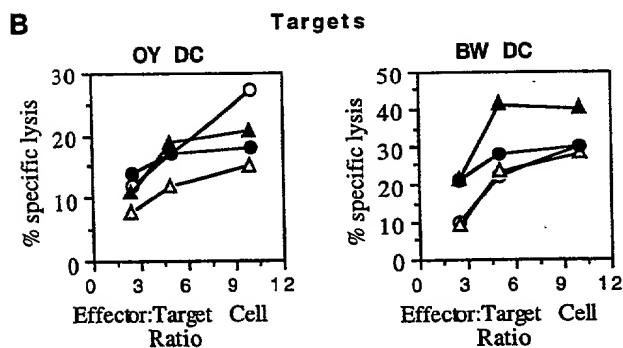
A



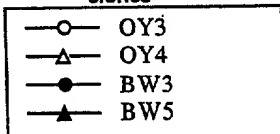
D



C



Vα24JαQ T cell clones



E

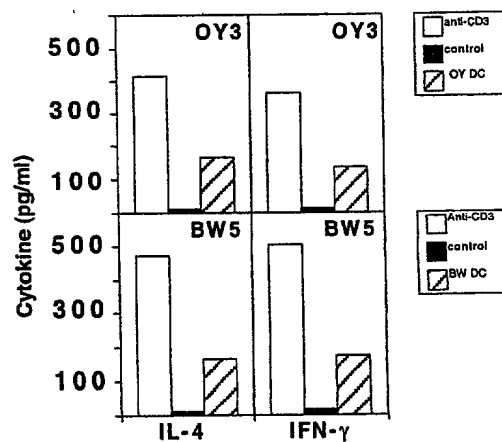


Figure 30

